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I have given these two Methods together, as there may be Occasions when one becomes preferable to the other.

IX. *An Account of a Treatise, (intituled, D. Alberti Halleri Archiatri Regii & Elect. Medicin. Anatomiae, Botan. Praelect. &c. Enumeratio Methodica Stirpium Helvetiae indigenarum. Qua omnium brevis Descriptio & Synonymia, Compendium Virium Medicarum, dubiarum Declaratio, novarum & rariorum uberior Historia & Icones continentur. Gottingiae, 1742. in Folio) extracted and translated from the Latin by William Watson, F. R. S.*

Read Feb. 3.
1742-3.

THIS learned and ingenious Performance, in Two Volumes in Folio, contains a Dedication to the PRINCE of WALES, a Preface, and 794 Pages.

In the Preface, the Author first lays down a Geographical Account of *Switzerland*, being situate from 46 to 48 Degrees in Latitude, and Four Degrees in Longitude; then mentions its various and almost surprising Degrees of Heat and Cold within the Space of a few Miles, arising from the different Arrangement of the Mountains: That it is in some Parts destitute both of Corn and Wood from the Intensity of the Cold; in others, where there are high Moun-

Mountains to the North, and Openings to the South, the reflected Heat becomes so troublesome, that the Inhabitants are forced to desert the Towns, and take Shelter in the Woods; that in other Parts the Country is so extremely pleasant, that *Tavernier* himself, though he had travelled over great Part of the Globe, declared he never had observed any more beautiful. The Author then mentions, that the Plants produced in such Difference of Soils and Situations, must be very numerous; he accordingly met with not only many of the Plants of the warmer Parts of *France*, almost all the *German* ones, but even those of *Lapland* and *Spitzberg*. These Varieties have been collected in a short time. You gather in the same Day, the *Bistorts* and *Saxifrages* which *Martens* collected in *Spitzberg*; the yellow *Milfoil*, *Xeranthemum*, *Ephedra*, and other Ornaments of the Southern Part of *France*. The Progression between both Extremes is so regular, that in going from *Bern* to *Grimful*, you pass first by *Chestnut-trees*, and other Inhabitants of the warm Countries, then *Vines*, then *Walnut-trees*, then *Beeches* and *Oaks*, then *Firs*, then *Larch-trees*, then *Pines*, then barren Heaths producing *Whortle-berries* and such-like, then Rocks, and Plants a Span high, and last of all, beyond which Vegetation ceases, you meet with a Species of round-leaved *Willow*, not exceeding an Inch in Height, and the hairy *Crow-foot* of *Platerus*; beyond this District, the Tops of the Mountains are covered with Snow. This great Variety is not (as it must be in any other Part of the World) the Collection of many Provinces, but furnished within the Space of 17 Leagues; and would be still less, if in going from

Se-

Sedunum, you ascend Mount *Sanetch*, whose Top is but seven Leagues from *Sedunum* [or *Syon*].

The Author adds, that the Sides of the Mountains produce great Variety of Mosses and Fungus's, that the Pastures furnish an inexpressible Collection of Grasses, of which in this Book he mentions 220 Species. The following Kinds of Plants seem to be wanting in *Switzerland*, viz. the hotter Kind, such as *Thyme*, *Lavender*, and *Rosemary*; those very frequent in champain Countries; those which are produced in Bogs and putrid Soil; some of those peculiar to the North, and maritime Plants.

The *Alps* contain about 500 Species peculiar to themselves, all diverse, perennial most of them, biting, scented, and frequently with a white Flower; besides many Plants common to other Places.

The Author then proceeds to enumerate all the Botanists, who by their Journals and Publications have laboured to oblige the World with Histories and Descriptions of the almost inexhaustible Number of Plants, which the various Soil and Situation of this Country produces; and after having mentioned the Performances of these great Men, he gives some Account of his own Travels, and the Progress of his botanical Studies; that he had gone through *Germany*, *Holland*, *France*, and *England*, and made very few Observations of the botanic kind, at least had preserved no Specimens of what he had seen; but upon his Arrival at *Basil* to attend the Lectures of *Bernoulli*, and study Mathematics there, he was seized, as it were, by the Genius of the Place, where those great Writers the *Bauhins* had lived, and were public Professors; and whose Chair at that Time

was very worthily filled by *Starhelinus*: That he began to collect, describe, and compile, with so great Hopes of Success, however remote, that he even attempted the Work before us, at a time when he was scarcely acquainted with the more common Plants. A Work of this kind had been begun by *John Gesner* of *Zurich*, a Descendant of the famous *Conrad Gesner's*, and a Friend of our Author's, for which Task he was very well qualified by his many laborious Researches; but at length his bad State of Health would not permit him to proceed in a Science, where he must not be confined only to his Closet, but climb up almost inaccessible Mountains, sometimes nearly perishing with Cold, and, possibly, in the same Day, almost stifled with Heat. This Gentleman not only sent our Author a great many Plants, but granted him whatever he had occasion for of his Collection, which consisted of a great Number of valuable Specimens, of which he alone was possessed.

Our Author specifies likewise, what Parts of the *Alps* have been looked over, and what remain hitherto unattempted; and then shews how large a Field is yet behind, for future Botanists to exercise their Genius upon; and that these Mountains have rather been cursorily passed over by Persons travelling over them to remote Places, often at an improper Season, than carefully examined; from whence it happens, that many not only of Mosses, but of the most perfect Plants, have either been omitted, or so negligently described, that it is impossible to reduce them to the Genus to which they belong. Add to this, that the *Fungus's*, and the very small Plants, such as the *Centunculus*, *Sedum tetrapetalon*, &c. were over-looked

looked by the antient Botanists, and seem to have been reserved for the Industry and Perspicuity of the *Vaillant's*, *Dillenius's*, and *Micheli's*, of the present Age. Our Author then candidly confesses, that although he had herborized upon many different Parts of this Country for Nine Years, he could by no means promise a full and perfect Enumeration of its Plants; for the Descriptions of the more antient Writers, especially the Grasses mentioned by *Caspar Bauhin*, are so obscure, that it is scarcely possible to know many of them by those means; that some Plants are inserted by Authors, which have occurred to no body since their Time; that others, if not quite lost, he never could meet with, notwithstanding he travelled for that Purpose to the Places where they have been said to be found; which may in some measure be owing to our Author's being short-sighted, from which Defect (he believes) he may, no doubt, have passed over some Plants, which he had been particularly in quest of: That he had received some Specimens so ill preserved, as not to be able to discover their generical Marks; and, lastly, that it is almost impossible to save any Seeds of the Plants of the *Alps*, or see them in that State, on account of the Snows falling so early as the latter End of *August*, and Beginning of *September*, whereby the Mountains are covered, and rendered unpassable.

Surrounded with Difficulties, he despairs of perfecting his Catalogue; but hopes he shall have the Reader's Pardon, after he is apprised of the Means our Author took against them. First, he carefully marked out the Characters of all his Plants, the Day he collected them; for not being prejudiced in favour

of any artificial Method, he looked over the Composition of the Flower with regard to its Petals, *Calyx*, and Seed-vessel, after the manner of Professor *Boerhaave*, at a Time when nobody had considered the *Stamina* and *Tubes* as generical Notes: That he compared with his Plants the botanical Writers of more than Two Centuries, whose Names are mentioned at the End of the Preface, beginning in order of Time with *Brunfelsius*, and concluding with the late Work of *Monsieur Geoffroy*: That he had examined their Descriptions of Plants, and compared them with their Figures, and made himself a Pinax of the Plants of *Switzerland*, even to the present Time.

Our Author, in the Work before us, has never inserted a doubtful Plant, without mentioning his Scruple, nor any but what he himself has seen, without an Asterisk. He has added to the End of the Work, those which he could with but little Certainty refer to any Class; and, contrary to the Practice of some late Writers, he never enumerates Variety, nor ever regards Proportion as a Mark of specific Difference, if even a less Plant produces Flowers twice as big as a larger Plant of the same Species, and holds that Size when planted in Gardens, and continues the Difference to its Posterity.

As to the Method and Order of this Work, our Author has been as short, and at the same time as descriptive, as possible. He has given the Synonymes of most good Authors: He generally first affixes the Name the Discoverer gave it, unless a very improper one; and then proceeding usually as the Authors lived, sets down the Appellations of *Conrad Gesner*,

Gesner, Cordus, Dodoneus, Lobel, Tabernemontanus, Hortus Aichstadiensis of *Basil Besler, Clusius, Caspar* and *John Bauhin, Morrifson, Tournefort*, and others, who have lived since them, either as they have discovered a new Plant, or illustrated an old one with a new Description, Figure, or Character. With regard to Method, he says he might have disposed them alphabetically, followed *Boerhaave's* Method, or *Linneus's*, but was fearful of making unnatural Distortions; especially as he was not writing an universal History of Plants. He thinks it not at all proper to dispose Plants in the same Class, unless their Affinity is perfect; and lays it down as a Foundation, upon which alone a natural Method can be formed, that however different Plants may seem in one Characteristic, those should be placed together which agree in most others; and however alike they may be in one Point, that those be separated which differ in many others. The Neglect of this Axiom has made all Methods unnatural.

The Author then apologizes for giving new Names to some Plants, but he could not omit inserting some that were more expressive, and give them the Preference to old ones, that imported little or nothing, although they had the Sanction of Antiquity; but he scarce ever has changed the generical Names, because amongst things that are in themselves indifferent, Custom should be always complied with; and as all generical Names are arbitrary, scarce any can be thought of to contain enough to distinguish the Plant by; but the specific Name ought to be a short Definition and Compendium of its nicest Differences: And although this may sometimes be thought too long,

long, the Marks of Difference in many kinds will not permit them to be contracted.

After he has acquainted the Reader with his Objections, and told his Reasons, he proceeds to that Part of his Work, which is intituled, *Nomina Scriptorum & Editionum*; and has given a Specimen of his great Erudition in a very laborious and learned History of almost all Botanical Authors, for more than Two Centuries: He therein points out their Excellencies and Defects, shews which of them were Originals, and which Plagiaries; gives an Account of all their Publications and Editions, and deduces the Rise and Progress of Botany through all its Stages, from the general Darknes of the 15th Century, to the nice Distinctions of the present Time. This may be esteemed a very valuable Performance. It may not be improper to exhibit from it, the different Characters of Two Books in the Author's own Words, whereby some Judgment may be formed of the rest. First, mentioning *Clusii rariorum Stirpium per Hispaniam observatarum*, he says, " *Cordus* was restored
" to the World in *Clusius*. He, with incredible
" Labour, collected the Plants of *Spain, Languedoc,*
" *England, the Alps, Austria, some Parts of Hun-*
" *gary, and those about Frankfort*: He afterwards
" drew them, and published their Figures very ex-
" pressively, and with great Neatness. He alone
" doubled the Number of Plants before known,
" although indeed many have been attributed to him,
" which are concealed in the Works of *Cordus,*
" *Aretius, and Gesner.*" Our Author afterwards,
speaking of *Fabregeou's Description des Plantes qui*
naissent autour de Paris, says, " Nothing can be
" more

“ more audacious than this Writer ; he often quarrels with good Authors, and obtrudes upon them long since dead, arbitrary Definitions proposed by himself. The Synonymes of his Plants, and the Definitions of his Species, are very much confused : He takes, with the utmost Impudence, the Names of *Vaillant* and *Tournefort*, but with ridiculous Alterations. Besides, to my great Abhorrence, he inserts a very great Number of Plants most certainly Exotic, as growing about *Paris* ; and, lest any thing should be wanting to spoil this Work, the typographical Errors are infinite.”

Before I give an Account of our Author's System of Botany, it will be necessary to mention the different Parts of Plants, from which other Authors have formed theirs. *Conrad Gefner* was the first who discovered, that Plants might be distinguished into *Genera* from their different manner of bearing Fruit, as appears by his posthumous Letters published by *Camerarius* ; but *Cesalpinus* first reduced it into Practice. *Cesalpinus*, I say, *Ray*, *Herman*, whose Plan is much improved by *Boerhaave*, and *Knaut's* Systems, are formed from the Fruit ; *Tournefort's*, from the Figure of the Flower ; *Rivinus's*, which is followed by *Ruppius*, from the Number and Equality of the Petals ; *Magnol's*, from the *Calyx* ; *Linneus's*, from the *Stamina*, *Pistillum*, and Sex of the Flower ; and our Author, his principally from the Number and Disposition of the *Stamina*, and likewise from the manner of Fruiting. I have, at the End of this Extract, abridged it according to the Order of the *Classes*, *Genera*, and *Species*.

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Throughout the Body of this Work, our Author has ranged his Plants after this Method; and when he mentions a particular Plant, he first gives the generical Name, and its Inventor; then lays down the Form of the Flower, and the Manner of distinguishing this Plant from others of the same Species; then quotes the Synonymes, then the Place of its natural Growth, afterwards the Description of its Root and Leaves; and lastly, collects all the Evidence on both Sides, with regard to its Uses as a Medicine, or the contrary. I think it not improper to give here Part of the History of one Plant, as a Specimen of the rest. The Author, speaking, p. 298. of *Veratrum*, or *white Hellebore* of the Shops, after mentioning the generical Name, Form of the Flower, 29 Synonymes of different Writers, the Place of Growth, and the Form of its Root, says, " This Plant is
 " universally agreed to be hurtful, though *Brassa-*
 " *vola*, p. 531. found some People hardy enough
 " to give a Drachm at a Dose, without any Cor-
 " rector; which Dose even *Welsch* and *Herman*
 " have allowed in Infusion to Dæmoniacks, also
 " *Matthiolus*, p. 1222. with good Success, to Lu-
 " natics. *Hermann* in like Cases gives the Root
 " in Substance, from 15 to 30 Grains. Notwith-
 " standing which, we find in the *Ephemerides na-*
 " *turæ curios.* Anno 1^{mo} Obs. 65. that One Scrupule
 " has certainly produced Convulsions; and *Wepfer*
 " mentions a Dog killed with the same Dose, and
 " *Fallopious de Purgant.* likewise many strangled
 " therewith. *Lentilius*, p. 868. takes Notice of
 " violent Vomitings occasioned by the Root's being
 " given by Mistake, instead of *Solomon's-seal*. The
 " *Acta*

“ *Acta Hafn.* Anno v. Observ. 55. say, that those
 “ most hardy Mortals, who live in the Northern
 “ Parts of the World, and purge themselves with
 “ this Plant, receive great Mischief in their Eyes
 “ therefrom, even sometimes to be followed by
 “ Blindness. See also its terrible Effects in the *Breslau*
 “ *Transactions*, Anno 1725. Even amongst the An-
 “ tients, notwithstanding that both sorts of *Hellebore*
 “ were produced in *Anticyra*, the black was only
 “ made use of in Purges, on account of the emetic
 “ Quality of the white. See *Pausanias*, Lib. X. pag.
 “ 623. *Alleyne* will scarcely admit it to be safe
 “ given in Powder as a Sternutatory. But if the
 “ Juice of this Plant, with its full Powers, shall by
 “ any Method get into the Blood, it is so quick a
 “ Poison, that the Animal immediately dies, if
 “ wounded even in a slight manner, and the Juice
 “ applied thereto. See *Crato*, Epist. II. pag. 226.
 “ *Matthiolus* found this Experiment true upon Hens.
 “ See pag. 1226. *Epistolar.* pag. 219. And that the
 “ Putrefaction excited thereby was so great, that the
 “ Flesh immediately was grown soft. See *Arceus de*
 “ *Curand. Vuln.* Lib. I. pag. 70. Nor does the Cause
 “ seem to be obscure, seeing that the Roots, being
 “ chewed, fire the Mouth and Throat, and pour
 “ forth a very sharp Liquor, not unlike that of Lime.
 “ *Geoffroy de Mat. Medic.* Vol. II. p. 226. But *Con-*
 “ *rad Gesner*, in the Work published by himself,
 “ assures us, that his *Oxymel Elleboratum* may be
 “ given to Two Drachms without any Mischief, and
 “ that it is very useful to promote the *Menses*, Ex-
 “ pectoration, and Sweat.”

This may serve as a Specimen of our Author's great Industry and Exactness; which he adheres to throughout the whole Work, where a Plant has by any, whether antient or modern, medical Writer or Historian, been celebrated for medicinal Purposes, or its Uses in the Art of Dying. His Descriptions are so exact, that it is almost impossible, that any Person, ever so little conversant with Botany, should mistake one Plant for another. His Figures, of which there are 24 Tables, are finely engraved, and with great Accuracy, as appears from comparing them with their Descriptions. His Method is very natural, and not difficult to comprehend when considered; though at first View it seems more so than *Ray's*, *Tournefort's*, or *Boerhaave's*: And indeed there have been already so many Botanical Systems, such warm Controversies among Authors, so many bad Names, such great Confusion, that as often as there appears a new System, it sends forth a Panic throughout the Botanical World; as it adds to the Number of Names already too great, and tends to the Discouragement of those who are desirous of being acquainted with Plants. But our Author's System being, as I said before, very natural, and as he gives but few new generical Names, and at the same time when he gives his own, mentions those of most good Authors; these Considerations take off many Objections, to which some late Botanic Writers are liable. In the Work before us, the Author takes in only the Plants of *Switzerland*; but I believe his Plan may be extended to a general History, which, if executed with the same Accuracy as the present Work, cannot but be a most valuable Performance.